

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of

Bernd WENDEROTH et al.

Atty. Ref.: 3557-43

Serial No. 10/536,806

TC/A.U.: 1796

Filed: May 27, 2005

Examiner: OGDEN JR, Necholus

For: COOLANT BASED ON AZOLE DERIVATIVES CONTAINING 1,3-  
PROPANEDIOL FOR FUEL CELL COOLING SYSTEMS

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April 3, 2009

Mail Stop Appeal Brief - Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**REPLY BRIEF**

The Examiner's Answer dated February 5, 2009, misinterprets the data present in the asserted prior art references and the application's specification. Although this Reply Brief addresses only the Examiner's arguments and statements proffered for the first time in the Examiner's Answer, Applicants fully reiterate and stand on the arguments made in the Appeal Brief filed November 12, 2008, even if not repeated here.

**The Examiner's Answer Misinterprets the Data Showing Unexpected Results**

The Examiner's Answer echoes the previous official actions word for word. The only new verbiage appears on the bottom of page 5, the bottom of page 6, and page 7. In these paragraphs, the Examiner addresses – for the first time – Applicants' arguments regarding the longevity and superiority of Applicants' compositions. Even now, however, the Examiner misinterprets this data.

The new verbiage and newly articulated rebuttal to Applicants' arguments raises two new arguments (demarked by bracketed numerals) and states in its entirety:

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[1] Furthermore, the showing is not commensurate in scope with the claimed invention. Appellant's table 1 examples are drawn to specific benzotriazoles and tetraethoxysilane in specific proportions. Appellants' claims are drawn to a much broader 5-membered heterocyclic compounds or azole derivatives and ortho-silicic esters (see claim 1). Therefore, criticality cannot be established with respect to the Table 1 examples, in light of the appellant's failure to commensurate the showing with the claimed invention and make a comparison closely related to the art of record.

\* \* \*

Whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range. In re Clemens, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980).

Appellant argues that the prior art of record teaches away from appellant's claimed invention and Eaton shows, at Table 6 an increase in conductivity from 9 to 14  $\mu\text{mhos}/\text{Cm}$  and PCT'630 increases from 0.8 to 3.0  $\mu\text{S}/\text{cm}$  (page 7, lines 17-23).

[2] The examiner contends that PCT '630 further substantiates the primary references by disclosing examples of longevity and durability by increasing from 0.8 to 3.0  $\mu\text{S}/\text{cm}$  7 to 42 days as suggested by appellant. Appellant argues that in his Table 1 examples that they show increases ranging from 2.9 to 3.3  $\mu\text{S}/\text{cm}$  and 3.4-2.8  $\mu\text{S}/\text{cm}$  over 28 days. Therefore, it would appear to the artisan of ordinary skill that the secondary reference WO '630 teaches compositions with longevity and durability equally as effective as the claimed invention and the skilled artisan would have been motivated to include the additional component(s) of WO '630 to increase the longevity and durability as argued by appellant. Accordingly, nothing unexpected is seen by appellant's Table 1 examples since the data was previous proffered by WO '630.

(Examiner's Answer at 5-7.)

With respect to the first new argument, the Examiner alleges that the claims are "much broader" than the claimed invention. But the Examiner fails to identify any undue breadth associated with compounds and compositions not in the Examples with any

specificity or particularity. A comparison of the claims themselves shows they narrowly circumscribe the invention around the exemplary embodiments in the examples.

The Examiner, moreover, does not seem to earnestly contest that Applicants have compared exemplary embodiments with the closest prior art – prior art that is even closer than any of the asserted references. Because the closest prior art has been compared (to which the inventive compositions have been shown to be superior), the Examiner’s newly raised argument speciously alleging that the claims are “much broader” than the claims is largely beside the point.

With respect to the second new argument, the Examiner proves Applicants’ point: There are significant increases in electrical conductivity in the prior art compositions but not in Applicants’ compositions. For clarity, Applicants provide the percentage increases of electrical conductivity over time for examples of Applicants’ compositions and a comparative example:

	Initial	After 7 Days	After 14 Days	After 21 Days	After 28 Days
Example 1	2.9 $\mu$ S/cm	3.4 $\mu$ S/cm (+17.2%)	3.4 $\mu$ S/cm (+17.2%)	3.5 $\mu$ S/cm (+20.7%)	3.3 $\mu$ S/cm (+13.8%)
Example 2	3.4 $\mu$ S/cm	3.3 $\mu$ S/cm (-2.9%)	3.1 $\mu$ S/cm (-8.8%)	3.3 $\mu$ S/cm (-2.9%)	2.8 $\mu$ S/cm (-17.6%)
Comparative Example	3.2 $\mu$ S/cm	5.6 $\mu$ S/cm (+75.0%)	5.2 $\mu$ S/cm (+62.5%)		6.9 $\mu$ S/cm (+115.6%)

(Adapted from Specification, Table 1 at 8.)

As shown, the two exemplary compositions have a substantially constant electrical conductivity over 28 days of approximately  $\pm 20\%$  of the initial conductivity (and staying in the range of 2.8 to 3.5  $\mu$ S/cm), whereas the comparative example’s electrical

conductivity increases markedly, jumping over 50% within one week and over 100% after four weeks and never staying below 5.2  $\mu\text{S/cm}$

The only reference cited in the Examiner's Answer, PCT '630, shows significant similar increases in electrical conductivity as shown in the following table:

	Initial	After 7 Days	After 42 Days	After 77 Days
PCT '630 Example 1	0.8 $\mu\text{S/cm}$	2.3 $\mu\text{S/cm}$ (+187.5%)	3.0 $\mu\text{S/cm}$ (+275.0%)	
PCT '630 Example 2	2.6 $\mu\text{S/cm}$	2.2 $\mu\text{S/cm}$ (-15.4%)	14.4 $\mu\text{S/cm}$ (+453.8%)	18.6 $\mu\text{S/cm}$ (+615.4%)
PCT '630 Comparative Example	2.0 $\mu\text{S/cm}$	2.3 $\mu\text{S/cm}$ (+15.0%)	36.2 $\mu\text{S/cm}$ (+1710.0%)	

(Adapted from PCT '630, Table.)

PCT '630, thus, discloses examples and comparative examples in which the electrical conductivity significantly increases from the initial value. This is not surprising, because PCT '630 fails to recognize, understand, or appreciate that electric conductivity may remain relatively constant over time. There is simply nothing of record that would support a finding that the prior art necessarily and inherently has the unexpected properties and results as noted in the present application. Thus, the Examiner is simply wrong in stating that "it would appear to the artisan of ordinary skill that the secondary reference WO '630 teaches compositions with longevity and durability equally as effective as the claimed invention" because WO '630 teaches compositions with marked and significant increases in electrical conductivity over time.

### **CONCLUSION**

In conclusion it is believed that the application is in clear condition for allowance; therefore, early reversal of the Final Rejection and passage of the subject application to issue are earnestly solicited.

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Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:           /Gordon Klancnik/            
Gordon P. Klancnik  
Reg. No. 50,964

GPk:lmj  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100